

What is claimed is:

1 Sub 1. An apparatus for performing background caching of encrypted
A3 2 programming for later playback, comprising:

3 a memory operatively connected to a bus for storing received, encrypted digital
4 data packets of at least one pay-per-view (PPV) event;

5 a processor for decrypting the data packets when they are transferred by said
6 memory via said bus; and

7 a decoder for decoding said decrypted data packets for display on a display
8 device,

9 wherein the apparatus searches and caches data packets of said at least one
10 PPV event when in a power-down mode, and plays back a recorded PPV event in a
11 power-up mode upon selection by a user.

1 2. The apparatus according to claim 1, further comprising a recording
2 device for digitally recording said encrypted digital data packets, and for transmitting
3 said digitally recorded data packets to said memory.

1 3. The apparatus according to claim 2, wherein the recording device
2 includes at least one mass storage device.

1 4. The apparatus according to claim 3, wherein said mass storage device is
2 at least one of a hard disc drive, magnetic storage device or optical storage medium.

1 5. The apparatus according to claim 2, wherein said processor is a transport
2 processor operatively connected to said bus and to an input port for receiving said
3 encrypted digital data packets from said input port.

1 6. The apparatus according to claim 5, further comprising:
2 a host processor operatively connected to said bus and said memory for
3 performing graphics-user interface and browser functions; and

4 an interface for receiving said encrypted digital data packets from said transport
5 processor, and for transferring said received encrypted digital data packets
6 simultaneously to said memory via said bus, and to said decoder,

7 said memory further including a buffer space for temporarily storing the
8 encrypted digital data packets received from said interface,

9 said host processor directing said memory to transfer said encrypted digital data
10 packets to be digitally recorded by said recording device, and

11 said interface adapted to receive said digitally recorded data packets from said
12 recording device via said memory and said bus.

1 7. The apparatus according to claim 6, said interface being further adapted
2 to transfer said digitally recorded data packets to said decoder.

1 8. The apparatus according to claim 6, wherein said host processor
2 searches a program guide to find upcoming PPV events, and, when said PPV event
3 begins, the apparatus tunes to an appropriate transponder to begin receiving the
4 encrypted digital data packets.

1 9. The apparatus according to claim 8, wherein the digital data packets
2 include packetized audiovisual data, system time data and conditional access data.

1 10. The apparatus according to claim 5, wherein the transport processor
2 provides an additional layer of conditional access for the encrypted digital data packets,
3 if desired.

1 11. The apparatus according to claim 1, wherein the data packets are time-
2 stamped upon reception.

1 12. The apparatus according to claim 5,
2 wherein the data packets are time-stamped upon reception, and

3 wherein the decoder and transport processor utilize the recorded time stamps to
4 recreate the original transmission timing of the encrypted digital data packets, only
5 when the user selects a recorded PPV event for playback.

1 13. The apparatus according to claim 1,
2 wherein the memory stores encrypted digital data of a plurality of PPV events in
3 repetition while the apparatus is in the power-down mode, and
4 wherein the user only pays for those recorded PPV events that are selected for
5 playback in the power-up mode.

1 14. The apparatus according to claim 2, wherein said recording device is an
2 external storage medium.

1 15. The apparatus according to claim 5, wherein the transport processor
2 decrypts said encrypted digital data packets of the user-selected PPV event, and sends
3 the decrypted data packets to said decoder via said interface.

1 16. The apparatus according to claim 15, wherein said decoder includes an
2 MPEG A/V decoder for decoding the video portion of said decrypted digital data
3 packets, and an AC-3/MPEG audio decoder for decoding the audio portion of said
4 decrypted digital data packets.

1 17. The apparatus of claim 16, further comprising a video encoder that
2 converts the received video portion of the decrypted digital data packets to analog for
3 display.

1 18. The apparatus of claim 1, wherein the apparatus is configured as a set-
2 top box (STB) equipped with a digital video recorder.

1 19. A method for background caching encrypted programming for later
2 playback in a digital video recording (DVR) system, comprising:
3 storing received, encrypted digital data packets of at least one pay-per-view
4 (PPV) event in a memory,
5 time-stamping the received data packets upon reception;
6 decrypting the data packets when they are transferred by said memory via a
7 bus; and
8 decoding said decrypted data packets for display on a display device,
9 wherein said at least one PPV event is searched for, and its corresponding data
10 packets and cached, when the DVR system is in a power-down mode, and
11 wherein a selected PPV event is played back when the DVR system is in a
12 power-up mode, upon selection by a user.

1 20. The method according to claim 19, wherein said step of storing is
2 repeated for a plurality of PPV events when the DVR system is in said power-down
3 mode.

1 21. The method according to claim 20, wherein the user only pays for those
2 cached PPV events that are selected for playback in the power-up mode.

1 22. The method according to claim 19, wherein said searching includes
2 searching a program guide to find upcoming PPV events, and, when said PPV event
3 begins, the DVR system tunes to an appropriate transponder to begin receiving the
4 encrypted digital data packets.

1 23. The method according to claim 22, wherein said searching is performed
2 by a host processor in the DVR system.

1 24. The method according to claim 19, further comprising decrypting said
2 encrypted digital data packets of the user-selected PPV event, wherein said decryption

3 is performed in a transport processor operatively connected to said memory via said
4 bus.

1 25. The method according to claim 19, wherein said step of decoding
2 includes utilizing said recorded time stamps to recreate the original transmission timing
3 of the encrypted digital data packets, only when the user selects a recorded PPV event
4 for playback.

1 26. A set-top box (STB) for performing background caching of encrypted
2 programming for later playback, comprising:

3 searching means for searching a program guide to find upcoming pay-per-view
4 (PPV) events received as encrypted data packets;

5 storing means for caching the received encrypted data packets for later
6 playback; and

7 retrieval means for retrieving said data packets for display,

8 wherein the searching means searches and said storing means caches data
9 packets of said at least one PPV event when the STB is in a power-down mode, and
10 plays back a recorded PPV event when the STB is in a power-up mode.

1 27. The STB of claim 26, wherein said searching means and said storing
2 means repeat searching and recording for a plurality of PPV events, said recorded
3 plurality of PPV events being stored on an external storage medium for later playback.

1 28. The STB of claim 26,
2 wherein said encrypted digital data packets are time-stamped upon reception,
3 and

4 wherein said retrieval means decrypts said encrypted digital data packets, uses
5 the recorded time stamps to recreate the original transmission timing data of the data
6 packets, and decodes the decrypted digital data packets for display on a display
7 device.

29. The STB of claim 26, wherein a user only pays for those cached PPV events that are selected for playback in the power-up mode.